TECHNICAL ASSOCIATES OF CHARLOTTE, INC.

TABLE II. CRITERIA FOR OVERALL CONDITION RATING (RMS OVERALL VELOCITY, mm/s)rms

1. Assuming Machine Speed = 600 to 60,000 RPM.
2. Assuming Measurements by Accelerometer or Velocity Pickup securely mounted as Close as Possible to Bearing Housing.
3. Assuming Machine is Not Mounted on the Vibration Isolated Machinery – Set Alarm 30% - 50% Higher).
4. Set Motor Alarms the Same as that for the Particular Machine Type unless Otherwise Noted.
5. Set Alarms on Individual External Gearbox Position about 25% Higher than of a particular Machine Type.

MACHINE TYPE	GOOD	OK	ALERT	CRITICAL
COOLING TOWER DRIVES				
Long, Hollow Drive Shaft	0 – 6.7	6.7 – 10.8	10.8	16.2
Close Coupled Belt Drive	0 – 4.9	4.9 – 7.6	7.6	11.7
Close Coupled Direct Drive	0 – 3.6	3.6 – 5.4	5.4	8.1
COMPRESSORS				
Reciprocating	0 – 5.8	5.8 – 9.0	9.0	13.5
Rotary Screw	0 – 5.4	5.4 – 8.1	8.1	11.7
Centrifugal With or W/O External Gearbox	0 – 3.6	3.6 – 5.4	5.4	8.1
Centrifugal – Integral Gear (Axial Meas.)	0 – 3.6	3.6 – 5.4	5.4	8.1
Centrifugal – Integral Gear (Radial Meas.)	0 – 2.7	2.7 – 4.5	4.5	6.7
BLOWERS (FANS)				
Lobe-Type Rotary	0 – 5.4	5.4 – 8.1	8.1	12.1
Belt-Driven Blowers	0 – 4.9	4.9 – 7.6	7.6	11.7
General Direct Drive Fans (with Coupling)	0 – 4.5	4.5 – 6.7	6.7	9.9
Primary Air Fans	0 – 4.5	4.5 – 6.7	6.7	9.9
Large Forced Draft Fans	0 – 3.6	3.6 – 5.4	5.4	8.1
Large Induced Draft Fans	0 – 3.1	3.1 – 4.9	4.9	7.2
Shaft-Mounted Integral Fan (Extended Motor Shaft)	0 – 3.1	3.1 – 4.9	4.9	7.2
Vane-Axial Fans	0 – 2.7	2.7 – 4.5	4.5	6.7
MOTOR/GENERATOR SETS				
Belt-Driven	0 – 4.9	4.9 – 7.6	7.6	12.1
Direct Coupled	0 – 3.6	3.6 – 5.4	5.4	8.1
CHILLERS				
Reciprocating	0 – 4.5	4.5 – 7.2	7.2	10.8
Centrifugal (Open-Air) – Motor & Comp. Separate	0 – 3.6	3.6 – 5.4	5.4	8.1
Centrifugal (Hermetic) – Motor & Impellers Inside	0 – 2.7	2.7 – 4.0	4.0	6.3
LARGE TURBINE/GENERATOR				
3600 RPM Turbine/Generators	0 – 3.1	3.1 – 4.9	4.9	7.2
1800 RPM Turbine/Generators	0 – 2.7	2.7 – 4.0	4.0	6.3
CENTRIFUGAL PUMPS				
Vertical Pumps (12’ – 20’ Height) } Height from Grade to Top Motor Bearing. May be necessary to Spec. Lower Alarm for Lower Motor Bearing & for Upper Pump Bearing (depending on height).	0 – 5.8	5.8 – 9.0	9.0	13.5
Vertical Pumps (8’ – 12’ Height)	0 – 4.9	4.9 – 7.6	7.6	11.7
Vertical Pumps (5’ – 8’ Height)	0 – 4.0	4.0 – 6.3	6.3	9.4
Vertical Pumps (0’ – 5’ Height)	0 – 3.6	3.6 – 5.4	5.4	8.1
General Purpose Horizontal Pump – Direct Coupled	0 – 3.6	3.6 – 5.4	5.4	8.1
Boiler Feed Pumps – Horizontal Orientation	0 – 3.6	3.6 – 5.4	5.4	8.1
Hydraulic Pumps – Horizontal Orientation	0 – 2.2	2.2 – 3.6	3.6	5.4
MACHINE TOOLS				
Motor	0 – 1.8	1.8 – 3.1	3.1	4.5
Gearbox Input	0 – 2.7	2.7 – 4.0	4.0	6.3
Gearbox Output	0 – 1.6	1.6 – 2.7	2.7	4.0
Spindles:				
a. Roughing Operations	0 – 1.2	1.2 – 1.8	1.8	2.7
b. Machine Finishing	0 – 0.7	0.7 – 1.1	1.1	1.6
c. Critical Finishing	0 – 0.4	0.4 – 0.7	0.7	1.1

*NOTE: The “ALERT” and “CRITICAL” overall levels given above apply only to in-service machinery which has been operating for some time after initial installation and/or overhaul. They do not apply (and are not meant to serve as) Acceptance Criteria for either new or rebuilt machinery.

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